CCR Number: 0026	CRITICALITY: ROUTINE	DUE:12/08/98

DISTRIBUTION SHEET
EO-1 LEVEL II CCB

Matt Jurotich/EO-1 Payload Manager	Pete Spidaliere/EO-1 Mission Mgr
Nick Speciale/EO-1 Mission Technologist	M. Perry/SYS Engineer/Swales
Terry Smith/Warp Lead Engineer	Dan Mandl/Ground Systems Mgr
Mike Kelley/Flight Assurance/GSFC	William Browne/GSFC

NEW MILLENNIUM PROJECT CONFIGURATION CHANGE REQUEST

PROGRAM EO-1
CCR NO. 0026
DATE INITIATED 12/08/98

TITLE CHANGES TO EO-1 SPACECRAFT TO GROUND ICD-23
ORIGINATOR Dan Mandl/Ground Sys Mgr
ORIGINATOR'S CHG. NO.
SPONSOR/CODE Dan Mandl PHONE x4323

EFFECTIVITY
ITEM: EO-1//SC/GRND
S / N
ITEM:
S / N
ITEM:
S / N

CHANGE CLASS

	I	II
PRELIMINARY	☐	☐
FORMAL	☐	☐

TYPE OF CHANGE

MILESTONE	☐	INTERFACE	☒	SOFTWARE	☐
DOCUMENT	☒	POWER	☐	OTHER	☐
COST ____	☐	WEIGHT	☐	____	☐

DOCUMENTS OR SOFTWARE AFFECTED
EO-1 S/C TO GROUND ICD - 23

PROBLEM
The attached Preliminary Interface Revision Notice (PIRN) contains changes to the Spacecraft to Ground Interface Control Document (ICD-23). This PIRN includes suggested changes that will be incorporated as a revision to the document. The PIRN will become an official Level II ICD change once the EO-1 project Configuration Control Board (CCB) chairman signs this CCR and the attached PIRN.

PROPOSED SOLUTION
Approve the attached PIRN 001 to EO-1 SC TO GROUND ICD-23 by the EO-1 Level II Configuration Control Board (CCB). The signed PIRN will serve as the official approval of changes to this ICD. Future changes will be initiated by submittal of Configuration Change Requests (CCRs) and PIRN for CCB approval. This document is maintained by the EO-1 Configuration Management Office (CMO).

BOARD ACTION

APPROVE	☑
APPROVE WITH CHANGE	☐
DISAPPROVE	☐
WITHDRAW	☐

APPROVAL LEVEL REQUIRED

LEVEL I HQS	☐
LEVEL II GSFC	☒
LEVEL III	☐

CRITICALITY LEVEL

EMERGENCY	☐
URGENT	☐
ROUTINE	☒

PROCUREMENT CHANGE ORDER CLASSIFICATION

ROUTINE		URGENT		EMERGENCY	
OPTION 1	☐	OPTION 1	☐		
OPTION 2	☐	OPTION 2	☐		

COMMENTS
approve to incorporate PIRN 001 into ICD-23.

CHAIRPERSON _____ DATE 16 Feb 99

3/28/96

GODDARD SPACE FLIGHT CENTER	1. PAGE 1 OF 14
PRELIMINARY SPECIFICATION CHANGE NOTICE (PSCN) No._____ or PRELIMINARY INTERFACE REVISION NOTICE (PIRN) No. 001	2. INIT. DATE: 12/07/98 3. CONTRACT NUMBER

4. ASSOCIATED CONTROL NUMBERS: EO-1CCR 0026	5. CI'S AFFECTED: SC TO GRND ICD-23	6. DOCUMENT NUMBER: REVISION:

7. DESCRIPTION OF CHANGE:

1. Change: Section 6.2.1 Science Data Acquistion and Storage Commands:

From: TBS

To:

The following commands, in the sequence given here, are required to initiate a **Science Data Record** operation:

[1] Start Record Command

Upon receiving this command, the WARP opens the files specified in the command and configures the WARP for recording. If a file id is specified for the housekeeping record then the WARP immediately starts buffering housekeeping data. Note that once a record session has started no other files can be opened or closed until a stop record command has been received.

[2] Start Instrument Data

Once the WARP is configured for recording science data recording will begin when the science instrument is commanded to start outputting data to the WARP.

[3] Stop Instrument Data

When the desired data has been collected the science instrument will be commanded to stop outputting data to the WARP.

[4] Stop Record Command

When all science instruments have been stopped and the record session is finished a stop record command will fill out partial logical blocks, record the housekeeping data into bulk memory, and then close all the open files.

ORIGINATING ORGANIZATION APPROVAL:	ORGANIZATION:	
PREPARED BY: S.Schneider/EO-1 CMO HST CCB ACTION APPROVE	SIGNATURE:	DATE: 16 Feb 99

2.) Change Section 6.2.4 Commands Versus Modes of Operation:

From:

6.2.4 COMMANDS VERSUS MODES OF OPERATION

DUE TO CERTAIN LIMITATIONS, CERTAIN COMMANDS CAN ONLY BE SENT WHEN THE WARP IS IN CERTAIN MODES OF OPERATION. THE FOLLOWING TABLE SHOWS THE VALID COMMANDS EACH MODE OF OPERATION. "REJECT" DENOTES THAT THE COMMAND WILL BE REJECTED, AND "ACCEPT" DENOTES THAT THE COMMAND IS ACCEPTABLE UNDER THE CORRESPONDING MODE.

GROUND COMMAND	STDBY	INIT	CONFIG	SCI_REC	SB_PB	XB_PB
NO OP	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT
RESET COUNTERS	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT
FORMAT MEMORY	ACCEPT	REJECT	REJECT	REJECT	REJECT	REJECT
CONFIG MASKS	ACCEPT	REJECT	REJECT	REJECT	REJECT	REJECT
CONFIG REFRESH INT	ACCEPT	REJECT	REJECT	REJECT	REJECT	REJECT
START H/K RECORD	ACCEPT	REJECT	REJECT	ACCEPT	REJECT	REJECT
STOP H/K RECORD	NO-OP	NO-OP	NO-OP	NO-OP	NO-OP	NO-OP
START SCIENCE RECORD	ACCEPT	REJECT	REJECT	REJECT	REJECT	REJECT

GROUND COMMAND	STDBY	INIT	CONFIG	SCI_REC	SB_PB	XB_PB
STOP SCIENCE RECORD	NO-OP	NO-OP	NO-OP	ACCEPT	NO-OP	NO-OP
S-BAND Q FILE	REJECT	REJECT	REJECT	REJECT	ACCEPT	REJECT
S-BAND DQ FILE	REJECT	REJECT	REJECT	REJECT	ACCEPT	REJECT
START XB OUTPUT	ACCEPT	REJECT	REJECT	REJECT	ACCEPT	ACCEPT
STOP XB OUTPUT	NO-OP	NO-OP	NO-OP	NO-OP	NO-OP	ACCEPT
XB Q FILE	REJECT	REJECT	REJECT	REJECT	REJECT	ACCEPT
XB DQ FILE	REJECT	REJECT	REJECT	REJECT	REJECT	ACCEPT
RESET EDAC	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT
DELETE FILE	ACCEPT	ACCEPT	REJECT	REJECT	REJECT	REJECT
DEALLOCATE BLOCKS	ACCEPT	ACCEPT	REJECT	REJECT	REJECT	REJECT

To:

6.2.4 COMMANDS VERSUS MODES OF OPERATION

DUE TO CERTAIN LIMITATIONS, CERTAIN COMMANDS CAN ONLY BE SENT WHEN THE WARP IS IN CERTAIN MODES OF OPERATION. THE FOLLOWING TABLE SHOWS THE VALID COMMANDS EACH MODE OF OPERATION. “REJECT” DENOTES THAT THE COMMAND WILL BE REJECTED, AND “ACCEPT” DENOTES THAT THE COMMAND IS ACCEPTABLE UNDER THE CORRESPONDING MODE.

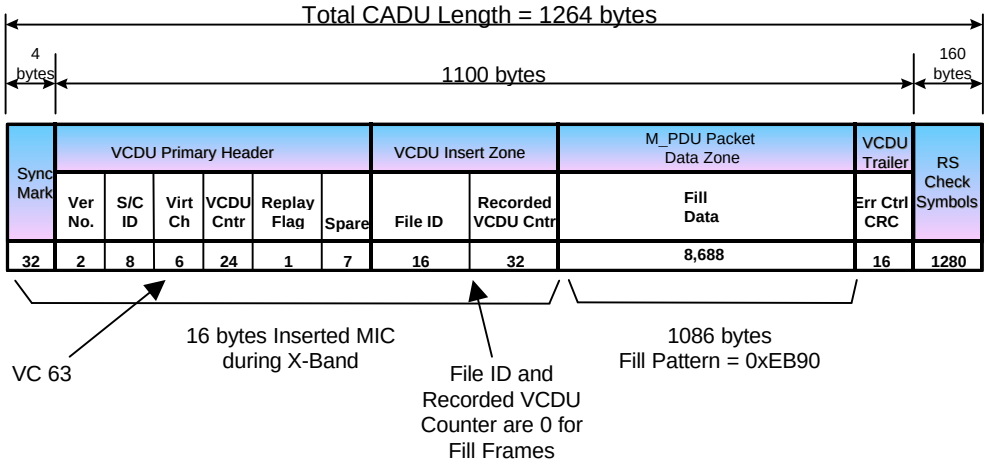
GROUND COMMAND	STDBY		CONFIG	SCI_REC	SB_PB	XB_PB
NO OP	ACCEPT		ACCEPT	ACCEPT	ACCEPT	ACCEPT
RESET COUNTERS	ACCEPT		ACCEPT	ACCEPT	ACCEPT	ACCEPT
FORMAT MEMORY	ACCEPT		REJECT	REJECT	REJECT	REJECT
CONFIG MASKS	ACCEPT		REJECT	REJECT	REJECT	REJECT

GROUND COMMAND	STDBY		CONFIG	SCI_REC	SB_PB	XB_PB
CONFIG REFRESH INT	ACCEPT		REJECT	REJECT	REJECT	REJECT
START H/K RECORD	ACCEPT		REJECT	ACCEPT	REJECT	REJECT
STOP H/K RECORD	NO-OP		NO-OP	NO-OP	NO-OP	NO-OP
START SCIENCE RECORD	ACCEPT		REJECT	REJECT	REJECT	REJECT
STOP SCIENCE RECORD	NO-OP		NO-OP	ACCEPT	NO-OP	NO-OP
S-BAND Q FILE	REJECT		REJECT	REJECT	ACCEPT	REJECT
S-BAND DQ FILE	REJECT		REJECT	REJECT	ACCEPT	REJECT
START XB OUTPUT	ACCEPT		REJECT	REJECT	ACCEPT	ACCEPT
STOP XB OUTPUT	NO-OP		NO-OP	NO-OP	NO-OP	ACCEPT
XB Q FILE	REJECT		REJECT	REJECT	REJECT	ACCEPT
XB DQ FILE	REJECT		REJECT	REJECT	REJECT	ACCEPT
RESET EDAC	ACCEPT		ACCEPT	ACCEPT	ACCEPT	ACCEPT
DELETE FILE	ACCEPT		REJECT	REJECT	REJECT	REJECT
DEALLOCATE BLOCKS	ACCEPT		REJECT	REJECT	REJECT	REJECT
RS422 TEST MODULE	**ACCEPT**		**REJECT**	**ACCEPT**	**ACCEPT**	**ACCEPT**

3. Add: The following as Sections:

6.3.2.1 X-Band Fill Frames

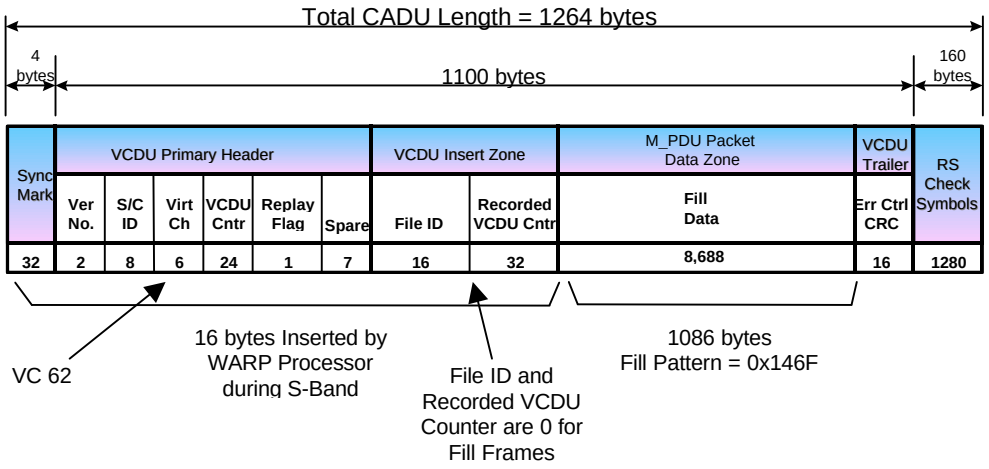
During X-Band playback the WARP will output fill frames whenever data is not being played back. The X-Band fill frames will be sent on Virtual Channel 63. The fill frame data zone will be filled with the pattern 0xEB90. The file id will be 0 for fill frames. Note that the hardware increments the recorded VCDU counter automatically so it will not be 0.



6.3.2.2 S-Band Fill Frames

During S-Band playback if the WARP does not supply playback data the Communications RSN will automatically output fill frames. When the WARP does supply playback data it will be provided in blocks of 32 VCDU's. If the software does not have enough data to fill out 32 VCDU's the remaining VCDU's will be fill frames. Fill frames generated by the WARP will be sent on the alternate virtual channel 62. This is done to prevent VCDU counter fill frame sequence gaps. The WARP software has no way of synchronizing its fill frame sequence counter with the one output by the Communications

RSN. The fill frame data zone will be filled with the pattern 0x146F. The file id and the recorded VCDU counter will be 0 for fill frames.



4. Add: The following after Section 6.4 PLAYBACK DATA FORMAT:

6.4 PLAYBACK DATA FORMAT

6.4.1 Hyperion SWIR Data File

The Hyperion Science Data is stored as VNIR frames and SWIR frames. Each frame shall consist of a header followed by science data. The VNIR frame header shall consist of 4 32-bit words and the SWIR frame header shall consist of 5 32-bit words. The Frame Header includes the following fields:

- S/C Time Code = time broadcast by the S/C.

Spacecraft Time							
Seconds				Sub-Seconds			
TC 8	TC 7	TC 6	TC 5	TC 4	TC 3	TC 2	TC 1
Time Code Used In Header						Not Used	
32-bit				32-bit			

- Sync Time = time from S/C Tone to Hyperion frame sync in 32 µSec resolution.
- Frame Number = frame count from start command to stop command.
- Gains, Offsets, & Integration Time = ASPs settings.

Bit 0 Bit 31

SWIR Frame Header							
SWIR ID	TC 8				TC 7		TC 6
SWIR ID	TC 5				TC 4		TC 3
SWIR ID	INT Time				OSD		OSC
SWIR ID	GD	GC	GB	GA	OSB		OSA
SWIR ID	Sync Time				Frame Number		
8-bit	8-bit				8-bit		8-bit

Each 32-bit science data word shall consist of two 12-bit pixel data words (DB0:11 and DB16:27) and each with a 4-bit header (DB12:15) and (DB28:31). DB11 and DB27 shall be the LSBs of the 12-bit science data and DB0 and DB16 shall be the MSBs.

Bit 0 Bit 95

Science Image Data											
Header	Pixel 2 Data	Header	Pixel 1 Data	Header	Pixel 2 Data	Header	Pixel 1 Data	Header	Pixel 2 Data	Header	Pixel 1 Data
4-bit	12-bit	4-bit	12-bit	4-bit	12-bit	…					

MSB...LSB

.
.
.

SWIR Frame Header							
SWIR ID	TC 8				TC 7		TC 6
SWIR ID	TC 5				TC 4		TC 3
SWIR ID	INT Time				OSD		OSC
SWIR ID	GD	GC	GB	GA	OSB		OSA
SWIR ID	Sync Time				Frame Number		
8-bit	8-bit				8-bit		8-bit

Science Image Data											
Header	Pixel 2 Data	Header	Pixel 1 Data	Header	Pixel 2 Data	Header	Pixel 1 Data	Header	Pixel 2 Data	Header	Pixel 1 Data
4-bit	12-bit	4-bit	12-bit	4-bit	12-bit	…					

.

.
.

Bit N		M-1
End of Science Data Fill Pattern		
Till the end of the 1712-byte interleaved RS block = repeated 0xA55A		

(possible range of length: 0 - 1709 bytes)

Bit M		EOF
End of File Fill Pattern		
Till end of the 929,616-byte logical block = repeated 0x13C7		

(possible range of length: 0 - 927,904 bytes)

6.4.2 Hyperion VNIR Data File

The Hyperion Science Data is stored as VNIR frames and SWIR frames. Each frame shall consist of a header followed by science data. The VNIR frame header shall consist of 4 32-bit words and the SWIR frame header shall consist of 5 32-bit words. The Frame Header includes the following fields:

- S/C Time Code = time broadcast by the S/C.

Spacecraft Time							
Seconds				Sub-Seconds			
TC 8	TC 7	TC 6	TC 5	TC 4	TC 3	TC 2	TC 1
Time Code Used In Header						Not Used	
32-bit				32-bit			

- Sync Time = time from S/C Tone to Hyperion frame sync in 32 µSec resolution.
- Frame Number = frame count from start command to stop command.
- Gains, Offsets, & Integration Time = ASPs settings.

Bit 0				Bit 31
VNIR Frame Header				
VNIR ID	TC 8	TC 7	TC 6	
VNIR ID	TC 5	TC 4	TC 3	
VNIR ID	XX	OSD / OSC	OSB	OSA
VNIR ID	Sync Time	Frame Number		
8-bit	8-bit	8-bit	8-bit	

Bit 0 Bit 95

Science Image Data											
Header	Pixel 2 Data	Header	Pixel 1 Data	Header	Pixel 2 Data	Header	Pixel 1 Data	Header	Pixel 2 Data	Header	Pixel 1 Data
4-bit	12-bit	4-bit	12-bit	4-bit	12-bit	…					

MSB...LSB

.
.
.

VNIR Frame Header							
VNIR ID	TC 8	TC 7		TC 6	
VNIR ID	TC 5	TC 4		TC 3	
VNIR ID	XX	OSD	OSC	OSB	OSA
VNIR ID	Sync Time	Frame Number			
8-bit	8-bit	8-bit		8-bit	

Science Image Data											
Header	Pixel 2 Data	Header	Pixel 1 Data	Header	Pixel 2 Data	Header	Pixel 1 Data	Header	Pixel 2 Data	Header	Pixel 1 Data
4-bit	12-bit	4-bit	12-bit	4-bit	12-bit	…					

.
.
.

Bit N M-1

End of Science Data Fill Pattern
Till the end of the 1712-byte interleaved RS block = repeated 0xA55A

(possible range of length: 0 - 1709 bytes)

Bit M EOF

End of File Fill Pattern
Till end of the 929,616-byte logical block = repeated 0x13C7

(possible range of length: 0 - 927,904 bytes)

5.Change the following in Section 6.4.1 M/PAN BAND DATA FILE

From:

Bit 0 bit 95

Pixel Data								
pixel data	pixel data	band ID	pixel data	pixel data	band ID	pixel data	pixel data	band ID
12 bit	12 bit	8 bit	12 bit	12bit	8bit	12 bit	12 bit	8 bit

MSB... LSB MSB...LSB

To:

Bit 0 Bit 95

Pixel Data								
Header 1	Pixel 1 Data	Pixel 2 Data	Header 2	Pixel 1 Data	Pixel 2 Data	Header 3	Pixel 1 Data	Pixel 2 Data
8-bit	12-bit	12-bit	8-bit	12-bit	12-bit	8-bit	12-bit	12-bit

MSB...LSB MSB...LSB

From:

Bit K

Science Data Sync Pattern
72-bit fixed pattern + 24-bit counter = 0xFF00FF00F0F0F0CCAA000000

96-bit

To:

Bit K

Science Data Sync Pattern
80-bit fixed pattern + 16-bit counter + 32-bit's of 0's = 0xFF00FF00F0F0F0F0CCAA000000000000

128-bit

From:

Bit K+96

Pixel Data																	

.

To:

Bit K+128

Pixel Data											
Header	Pixel 1 Data	Pixel 2 Data	Header	Pixel 1 Data	Pixel 2 Data	Header	Pixel 1 Data	Pixel 2 Data	Header	Pixel 1 Data	Pixel 2 Data
8-bit	12-bit	12-bit	8-bit	12-bit	12-bit	…					

From:

Science Data Sync Pattern
72-bit fixed pattern + 24-bit counter = 0xFF00FF00F0F0F0CCAA000001

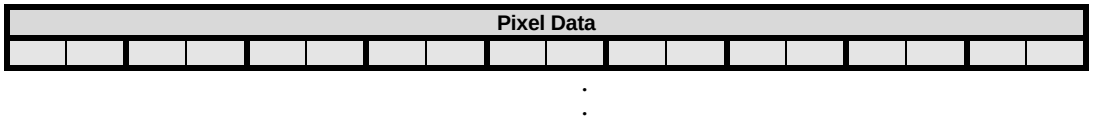
96-bit

To:

Science Data Sync Pattern
80-bit fixed pattern + 16-bit counter + 32-bit's of 0's = 0xFF00FF00F0F0F0F0CCAA000100000000

128-bit

From:



To:

Pixel Data											
Header	Pixel 1 Data	Pixel 2 Data	Header	Pixel 1 Data	Pixel 2 Data	Header	Pixel 1 Data	Pixel 2 Data	Header	Pixel 1 Data	Pixel 2 Data
8-bit	12-bit	12-bit	8-bit	12-bit	12-bit	…					

From:

Bit N N+95

End of Science Data Sync Pattern
72-bit fixed pattern + 0xFFFFFF = 0xFF00FF00F0F0F0CCAAFFFFFF

96-bit

To:

Bit N M-1

End of Science Data Fill Pattern
Till the end of the 1712-byte interleaved RS block = repeated 0xA55A

From:

Bit M EOF

End of File Fill Pattern
Till end of the 934,752-byte logical block = repeated 0x13C7

(possible range of length: 0 - 933,040 bytes)

To:

(possible range of length: 0 - 1709 bytes)

Bit M EOF

End of File Fill Pattern
Till end of the **929,616**-byte logical block = repeated 0x13C7

(possible range of length: 0 - **927,904** bytes)

6.Change Section 6.4.2 ATMOSPHERIC CORRECTION DATA FILE:

From:

Bit 0

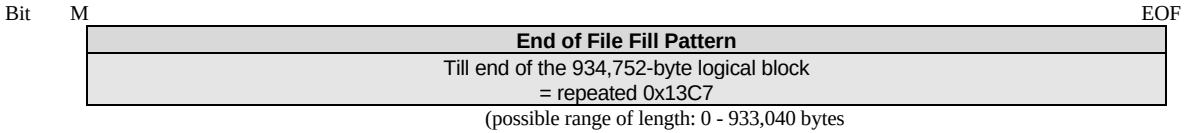
Science Data
TBD

To:

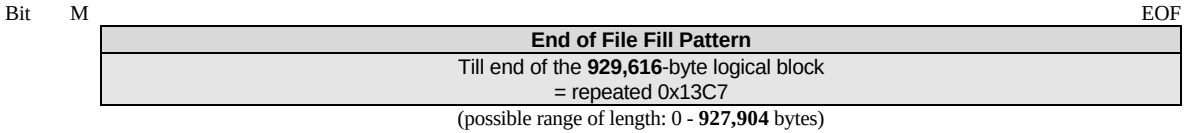
Bit 0

Science Data								
Pixel 1	Pixel 2	Pixel 3	Pixel 1	Pixel 2	Pixel 3	Pixel 1	Pixel 2	Pixel 3
16-bit	16-bit	16-bit						
MSB...LSB	MSB...LSB							

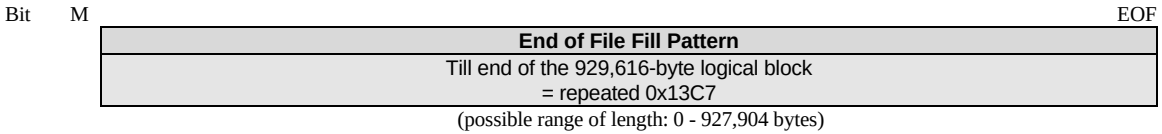
From:



To:



7. Add: The following at the end of Section 6.4.3 SPACECRAFT HOUSEKEEPING DATA FILE:



Date: Wed, 23 Dec 1998 09:19:46 -0500 (Eastern Standard Time)
From: Administrator <administrator@hst-nic.hst.nasa.gov>
Reply-to: (Mark Perry)
Subject: CCR:0022 - DUE: 11/30/98   ROUTINE
  Level-2
 Mark Perr WWW-COMMENTS

USER :   (Mark Perry) sent the following comments on :

Date: 23 Dec 98
CCR Number: 0022
Sponsor: Evan Webb
Due Date: 11/30/98

CCR Title: CHANGES TO EO-1 Spacecraft Level II Requirements

Remote host: 209.49.96.12 Email Address:

APPROVAL STATUS: APPROVED
Note:

COMMENTS:

Date: Wed, 06 Jan 1999 12:46:19 -0500 (Eastern Standard Time)
From: Administrator <administrator@hst-nic.hst.nasa.gov>
Reply-to: (Nicholas Speciale)
Subject: CCR:0026 - DUE: 12/22/98   ROUTINE Level-2 Nicholas Special WWW-COMMENTS

USER :   (Nicholas Speciale) sent the following comments on :

Date: 1/6/98
CCR Number: 0026
Sponsor: Dan Mandl
Due Date: 12/22/98

CCR Title: CHANGES TO EO-1 SPACECRAFT TO GROUND ICD-23

Remote host: 128.183.212.178 Email Address: speciale@pop500.gfsc.nasa.gov
---
APPROVAL STATUS: DISAPPROVED
Note:

COMMENTS: ICD has conflict is usage of VC #3 (section 5.1.1.2 is in conflict with section 6.1.1.3) and also still has reference to ALI GIS and WIS channels in section 6.1.1.3. Changes should be made to resolve these conflicts.

Also C&DH system has claimed use of additional VC's 11,12 and 13 for retransmission purposes, they should be incorporated into this CCR.

CCR SPONSOR RECOMMENDATION FORM

CCR NUMBER: 0026
CCR TITLE: Changes to EO-1 S/C TO GROUND ICD-23

CCR SPONSOR: Terry Smith/GSFC/567

SUMMARY OF COMMENTS RECEIVED: (list Level 4 CCB and internal reviewers who had comments and address those comments)

1)Nick Speciale: ICD has conflict. Is usage of VC 3 (section 5.1.1.2 is in conflict with section 6.1.1.3) and also still has reference to ALI GIS and WIS channels in section 6.1.1.3 changes should be made to resolve these conflicts.

Also, C&DH system has claimed use of additional VC's 11, 12, and 13 for re-transmission purposes, they should be incorporated into this CCR.

Sponsor Comment: **Disagree.** This conflict has been resolved. The WARP will continue to use vc 3 for Housekeeping data. The ACDS will now use VC 4 and VC14 for GPS data.

I also disagree with C&DH comment. This item does not pertain to the WARP

Sponsor Recommendation: **Approve with change.** (Add additional comments, see additional changes below.)

Terry Smith/C&DH/Code 735.4 February 9, 1999

Add : the following to Section 1.3 Acronyms

AOS Advanced Orbiting Systems
MIT Massachusetts Institute of Technology
XB X-Band

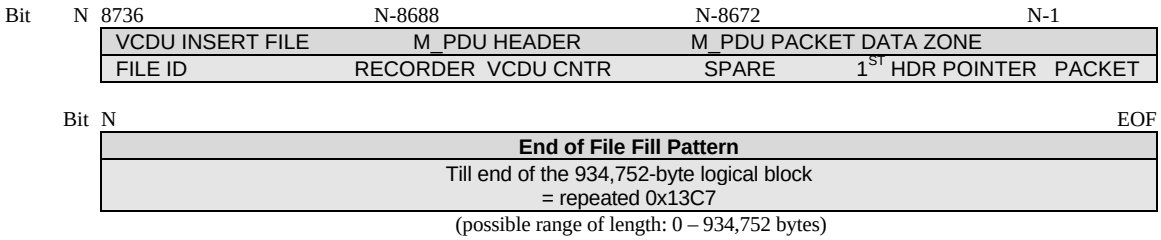
Replace Table in Section 6.2.4 Commands vs. Modes of Operations with the following Table.

Gnd Cmd	Standby	Mem Config	Record	S-Band PB	X-Band PB	Mem BIT	Low Power
No Op	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT
Reset Counters	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT
Format Memory	ACCEPT	REJECT	REJECT	REJECT	REJECT	REJECT	REJECT
Config Masks	ACCEPT	REJECT	REJECT	REJECT	REJECT	REJECT	REJECT
Config Refresh Int	ACCEPT	REJECT	REJECT	REJECT	REJECT	REJECT	REJECT
Start Record	ACCEPT	REJECT	REJECT	REJECT	REJECT	REJECT	REJECT
Stop Record	IGNORE	IGNORE	ACCEPT	IGNORE	IGNORE	IGNORE	IGNORE
S-Band Q File	ACCEPT	REJECT	REJECT	ACCEPT	REJECT	REJECT	REJECT
S-Band DQ File	REJECT	REJECT	REJECT	ACCEPT	REJECT	REJECT	REJECT
Start XB Output	ACCEPT	REJECT	REJECT	REJECT	IGNORE	REJECT	REJECT
Stop XB Output	IGNORE	IGNORE	IGNORE	IGNORE	ACCEPT	IGNORE	IGNORE
XB Q File	REJECT	REJECT	REJECT	REJECT	ACCEPT	REJECT	REJECT
XB DQ File	REJECT	REJECT	REJECT	REJECT	ACCEPT	REJECT	REJECT
Reset EDAC	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT
Delete File	ACCEPT	REJECT	REJECT	REJECT	REJECT	ACCEPT	ACCEPT

Dealloc Blocks	ACCEPT	REJECT	REJECT	REJECT	REJECT	ACCEPT	ACCEPT
RS422 Test Mode	ACCEPT	ACCEPT	REJECT	ACCEPT	ACCEPT	ACCEPT	ACCEPT
Set MIC Config	ACCEPT	REJECT	REJECT	REJECT	REJECT	ACCEPT	ACCEPT
Start Memory BIT	ACCEPT	REJECT	REJECT	REJECT	REJECT	REJECT	REJECT
Abort Memory BIT	IGNORE	IGNORE	IGNORE	IGNORE	IGNORE	ACCEPT	IGNORE
EDAC Overwrite Mode	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT
Record Auto Stop	ACCEPT	ACCEPT	REJECT	ACCEPT	ACCEPT	ACCEPT	ACCEPT

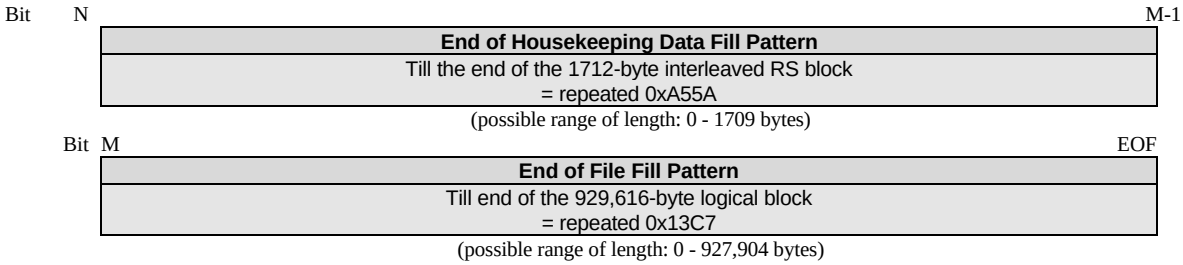
Change the following tables in Section 6.4.3 Spacecraft Housekeeping Data File

From:



(possible range of length: 0 – 934,752 bytes)

To:



(possible range of length: 0 - 1709 bytes)

(possible range of length: 0 - 927,904 bytes)

Change wording in Revision D of the Revision History section.

Replace "80 byte fixed pattern + 16 bit counter" with "80 bit fixed pattern + 16 bit counter + 32 bit's of 0's."

Replace the Spacecraft ID in section 3.5 with the following.

1. Spacecraft ID It's value is Decimal "137", Octal "211", or Hex "89".

Note that for X-Band Playback the correct Spacecraft ID will not be sent. It's value will be Decimal "105", Octal "151", or Hex "69".

Replace the Virtual Channel Assignments in section 3.5 with the following.

2. Virtual Channel ID

Value	Description
0	S/C C&DH Real Time Data
1	S/C C&DH Housekeeping Data
2	S/C C&DH Events
3	WARP Scene S/C Housekeeping Data
4	S/C C&DH GPS Data
6	WARP Raw Science Data - HSI SWIR
7	WARP Raw Science Data - HSI VNIR
8	WARP Raw Science Data - MS/PAN
9	WARP Raw Science Data - ACU
11	Retransmission of S/C C&DH Housekeeping Data
12	Retransmission of S/C C&DH Events
14	Retransmission of S/C C&DH GPS data
62	WARP S-Band generated Fill Frames
63	Fill Frames

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